Engineering Shorts

BIG BATTLEWAGON

In this picture, the first official photograph of the *U.S.S. Missouri,* she is dressed for battle. The *Missouri* (and her sister ship, the *Iowa*) are the world's largest battleships. The length of each is about three football fields, or slightly less than nine hundred feet. She is a 45,000 ton ship; this is a displacement tonnage, that is, weight of the water the ship displaces.

She is said to be the fastest battleship afloat with a speed of more than 30 knots, comparable to the fastest aircraft carrier or cruiser, usually thought of as the fastest major combat vessels.

Her propulsion apparatus is the most powerful installed on any vessel, developing a horsepower five times that of older battleships. It consists of four gear-turbine propulsion sets housed in four separate engine rooms.

The propulsion turbines are operated with high-pressure, high-temperature steam. This makes possible the better operating efficiency which the Navy recently revealed as a "secret weapon." Lower fuel consumption is one result. Even so, it's lucky for the captain that he doesn't have an "A" coupon book, for at full power, he gets but 10 *feet* to the gallon of fuel. The battlewagon can burn enough fuel oil in three and a half minutes to heat an average home for an entire season.

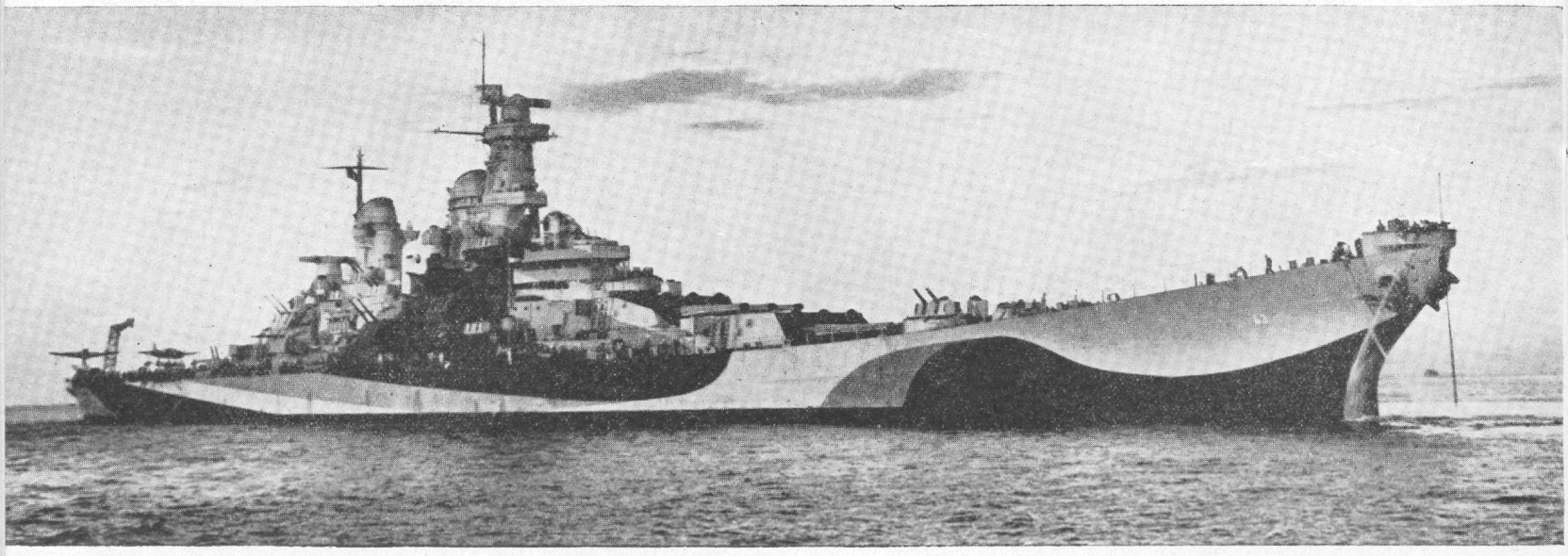
Power from the propulsion turbines is transmitted to the ship's four screws through big reduction gear sets. They are the largest installed on any vessel. Each set weighs about 110 tons. The biggest gear of each set, called the "bull gear," weighs 25 tons; it is about 13 feet in diameter.

The ship has auxiliary power plant equipment rated at 10,000 kilowatts. This electric power serves countless purposes of the *Missouri* or *Iowa.* It lights thousands of lamps; it operates more than 1000 electric motors installed on the ship. These motors perform tasks ranging from loading, aiming, and firing the guns, to operating a wide variety of equipment in the galley, such as dishwashers, meat grinders, and potato peelers.

HANGERS OF GLASS

At various times, a combination of glass fibers and plastics have been reported to be very versatile products. Now, they're being used for emergency hangers for our planes in advanced positions. The glass cloth has a coating of synthetic rubber or resin, and it seems to have world-wide usage. In tropical climates, it replaces canvas and saves trouble resulting from rot, mold, and mildew. In frigid regions, the glass-plastic material retains flexibility whereas canvas would be stiff and hard to handle. It has high strength in relation to weight, and is easy to tuck around fuselages.

Glass cloth curtains close in the ends of big hangers 146 feet wide. Glass side walls and curtains are used in making shed or nose-type hangers to cover the noses of planes whose wings and tails remain outside.



The U.S.S. Missouri —*Courtesy General Electric.*